

YUDIN, B.A., Cand Geol Min Sci — (diss) "The Tsag^{insk}iy Massive
of gabbro-labradorite and its related mineralization. (Central
~~part~~ ^{Kola} ~~region~~ of the Kola^{Kola} Peninsula)." Kirovsk, 1959, 21 pp (Acad
Sci USSR. ^{Kola} ~~Kola~~skiy Affiliate in S.M. Kirov) 200 copies (KL, 36-59,
113)

- 25 -

VOL'PSON, F.I.; LUKIN, I.I.; DYUKOV, A.I.; KUSHNAREV, I.P.; PEK, A.V.;
 RYBALOV, B.I.; SOBYUSHEIN, Ye.P.; KHOROSHILOV, L.V.; CHERNYSHEV,
 V.F.; BIRYUKOV, V.I.; GARMASH, A.A.; DRUZHININ, A.V.; KARAMYAN,
 K.A.; KUZNETSOV, K.F.; LOZOVSKIY, V.I.; MALINOVSKIY, Ye.P.;
 NEVSKIY, V.A.; PAVLOV, N.V.; ROMENSON, B.M.; SAMONOV, I.Z.;
 SIDORENKO, A.V. [deceased]; SOPKO, P.F.; CHEGLOKOV, S.V.; YUDIN,
 B.A.; KREYTER, V.M., doktor geologo-mineral.nauk; retsenzent; ..
 KOTLYAR, V.N., doktor geologo-mineral.nauk, retsenzent; GRUSHEVOY, .
 V.G.; doktor geologo-mineral.nauk, retsenzent; NAKOVNIK, N.I., doktor
 geologo-mineral.nauk, retsenzent; KUREK, H.N., doktor geologo-mineral.
 nauk, retsenzent; LIIGEN'KIY, S.N., retsenzent; SHATALOV, Ye.T., doktor
 geologo-mineral.nauk, red.; KRISTAL'NIY, B.V., red.; SERGEYEVA, N.A.,
 red.izd-va; GUROVA, O.A., tekhn.red.

[Basic problems and methods of studying structures of ore provinces
 (Continued on next card)]

VOL'FSON, F.I.---(continued) Card 2.

and deposits] Osnovnye voprosy i metody izucheniya struktur rudnykh polei i mestorozhdenii. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane neдр, 1960. 623 p.

(MIRA 13:11)

1. Akademiya nauk SSSR. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii. 2. Moskovskiy institut tsvetnykh metallov i solota (for Dyukov, Biryukov, Drushinin, Kuznetsov). 3. Institut mineralogii, geokhimii i kristalloghimii redkikh elementov AN SSSR (for Germash). 4. Akademiya nauk Armyanskoy SSR (for Karanyan). 5. Baleyzoloto (for Sidorenko). 6. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR (for Malinovskiy, Nevskiy, Pavlov, Chernyshev). 7. Moskovskiy geologorazvedochnyy institut im. S.Ordzhonikidze (for Ronsenson). 8. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya (for Samonov). 9. Voronezhskiy universitet (for Sopko). 10. Kol'skiy filial AN SSSR (for Yudin).

(Ore deposits)

YUDIN, B.A.

Titanomagnetite mineralisation in the TSaga Massif of gabbro
labradorites. *Vop. geol. i min. Kol'. poluos. no.3:3-38 '60.*

(MIRA 13:9)

(TSaga Massif--Titanomagnetite)

YELIOETEV, E.N.; KAVARDIN, G.I.; YUDIN, B.A.

Olivine in ultrabasic and basic rocks on the Kola Peninsula.
Vest.LGU 15 no.12:5-14 '60. (MIRA 13:6)
(Kola Peninsula--Chrysolite)

YUDIN, B. F.

PHASE I BOOK EXPLOITATION

JUN 1960

Gurvich, Lev Veniaminovich, Georgiy Akopovich Khachkuruzov, Vadim Andreyevich Medvedev, Inessa Veniaminovna Veyts, Georgiy Andreyevich Bergman, Vladimir Stepanovich Yungman, Nina Petrovna Rtishcheva, Lidiya Fedorovna Kuratova, Georgiy Nikolayevich Yurkov, Amaliya Abramovna Kane, Boris Fedorovich Yudin, Boris Isidorovich Brounshteyn, Viktor Feodosayevich Baybuz, Valeriy Aleksandrovich Kvilvidze, Yevgeniy Aleksandrovich Prozorovskiy, and Boris Aleksandrovich Vorob'yev.

Termodinamicheskiye svoystva individual'nykh veshchestv; spravochnik v dvukh tomakh. tom 1: Vychisleniye termodinamicheskikh svoystv; tom 2: Tablitsy termodinamicheskikh svoystv (Thermodynamic Properties of Individual Substances; Reference Book in Two Volumes. v. 1: Calculation of Thermodynamic Properties; v. 2: Tables of Thermodynamic Properties). 2d ed., rev. and enl. Moscow, Izd-vo AN SSSR, 1962. 1161 and 916 p. 4000 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR. Institut goryuchikh iskopayemykh; and Gosudarstvennyy komitet Soveta Ministrov SSSR

Card 1/5

Thermodynamic Properties (Cont.)

80V/6260 10

po khimii. Institut prikladnoy khimii.

Resp. Ed.: Y. P. Glushko, Academician, L. V. Gurvich, G. A. Khachkuruzov, I. V. Veyts, and V. A. Medvedev; Ed. of Publishing House: K. P. Gurov; Tech. Ed.: V. G. Iaut.

PURPOSE: This reference book may be used in scientific-research and experimental-design work in institutes, design offices, and schools of higher education, as well as for training specialists in chemical thermodynamics and thermal physics.

COVERAGE: Volume 1 of this work deals with methods for calculating thermodynamic properties and with the selection of constants required for the calculations. Volume 2 contains tables of thermodynamic properties (reduced thermodynamic potential, entropy, enthalpy, and the logarithm of the dissociation or ionization constants of equilibrium) compiled where data were lacking on the basis of published and unpublished material from a number of Soviet research institutes. Thermodynamic properties for the ideal gas

Card 2/35

Thermodynamic Properties (Cont.)

SOV/6260

state are presented in table form for 335 gases, 44 liquids, and 25 solids compounded from 33 chemical elements and their isotopes, viz.: H, D, T, He, Li, Be, B, C, N, O, F, Ne, Na, Mg, Al, Si, P, S, Cl, Ar, K, Ca, Br, Kr, Rb, Sr, Zr, I, Xe, Cs, Ba, Hg, and Pb. Thermodynamic properties are given for the following 22 gases in the range from room temperature to 20,000°K: H, H⁺, H⁻, O, O⁺, H₂, O₂, O₃, OH, OH⁺, H₂O, N, N⁺, N₂, N₂⁺, NO, NO⁺, C, C⁺, CO, CO⁺, and e⁻; for the 14 least stable gases up to 4000°K; and for the remaining 299 gases up to 6000°K. Virial coefficients for 34 gases are also given up to 6000°K.

TABLE OF CONTENTS (Volume 1) (Abridged):

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PART I. METHODS OF CALCULATING THE THERMODYNAMIC PROPERTIES OF INDIVIDUAL SUBSTANCES

Card 3/3

Yudin, B.F.

USSR/General and Special Zoology. Insects. Injurious
Insects and Ticks. Pests of Cereals Crops

2

Abs Jour : Ref Zhur - Biol., No 11, 1958, No 49591

Author : Yudin B.F.

Inst : -

Title : The Stem Flea - a Corn Pest in Central Ural

Orig Pub : Zashchita rast. ot vredit. i boleznoy, 1957, No 4,
58

Abstract : In Central Ural, the damage of corn by stem flea
larvae was of a mass nature in dry and hot weather
in the second half of May and in June of 1955.
Especially great was the damage (up to 75%) to
hothouse plants which were grown in peat-humus
pots. The damage was in the form of openings
situated in straight rows across the leaves. The
openings in each row were of the same size and
form. As the leaves grow in size, the openings
increased; sometimes the leaves bent and their

Card : 1/1 upper part died. -- A.P. Adrianov

USSR/Cultivated Plants - Fodders.

M

Abs Jour : Ref Zhur Biol., No 18, 1958, 82403

Author : Yudin, B.F.

Inst : All-Union Plant Cultivation Institute

Title : Growing Corn for Green Fodder in the Middle Urals

Orig Pub : Vestn. s.-kh. nauki, 1957, No 9, 113-116

Abstract : Results of the trials of Sverdlovskiy Affiliate of the All-Union Plant Cultivation Institute for 1955 are cited. In corn plantings, heavy (45 x 45 centimeters with 3 plants to a bunch) in comparison with the thin ones (70 x 70 centimeters with 2 plants to a bunch), the yield increased by 147% with early harvesting (26 of July). With harvesting after a month, this increase comprised 47%.

Card 1/1

YUDIN, B. (F.)

USSR/Cultivated Plants. Cereals.

M

Abs Jour: Ref Zhur-Biol., No 17, 1958, 77646.

Author : Yudin, B.; Berkinbaev, F.

Inst :

Title : Sorghum in the Desert Regions of Priaral'ye.

Orig Pub: S. kh. Kazakhstan, 1957, No 12, 17-20.

Abstract: No abstract.

Card : 1/1

YUDIN, B. F., Cand Agr Sci -- (diss) "Agrobiological study of corn
under conditions of the ^{Central} ~~Urals~~ ~~Mountains~~." Len, 1958. 19 pp
(All-Union Order of Lenin Acad Agr Sci in V. I. Lenin, All-Union
Inst of Plant Cultivation), 120 copies (KL, 15-58, 118)

-69-

YUDIN, B.F.

Sorghum in semideserts of western Kazakhstan. Zemledelie 6 no.3:66-67
Mr '58. (MIRA 11:4)

1. Priaral'skaya opytnaya stantsiya Vsesoyuznogo instituta rasteniye-
vodstva.

(Kazakhstan--Sorghum)

YUDIN, B.F.

Certain features in the flowering of corn in the Central Urals.
Bot. zhur. 43 no.6:861-867 Ja '58. (MIRA 11:7)

1. Vsesoyuznyy institut rasteniyevodstva, Leningrad.
(Sverdlovsk Province--Corn (Maize)) (Plants, Flowering of)

YUDIN B.F.; KHACHKURUZOV, G.A.

Heats of formation of halogen derivatives of methane. Trudy GIPKH
no. 42:132-157 '59. (MIRA 13:10)
(Methane) (Heat of formation)

29412
S/081/61/000/017/007/166
B102/B138

54800

AUTHOR:

Yudin, B. F.

TITLE:

The "Mendeleev rule" and its application in the calculation of physicochemical quantities. Communication II. Entropies, specific heats, temperatures and heats of phase transitions, critical temperatures, succession in Mendeleev's periodic system

PERIODICAL:

Referativnyy zhurnal. Khimiya, no. 17, 1961, 45,
abstract 175312 (Sb. tr. Gos. in-ta prikl. khimii, no. 46,
1960, 115 - 125)

TEXT: On the basis of experimental data it is shown that "Mendeleev's rule" may be applied, with appropriate corrections, for the approximate calculation of entropies, specific heats, temperatures and heats of phase transitions, and the critical temperatures of various compounds. Correction values have been derived for each case, together with the degree of error limit of applicability. The entropies, heats, boiling and critical temperatures are calculated for several compounds for which no experimental data

Card 1/2

The "Mendeleyev rule" and its...

29432
S/081/61/000/017/007/166
B102/B138

are as yet known. It is stated that "Mendeleyev's rule" can be used to calculate entropies and specific heats of compounds taken according to their position on the periodic table. For Communication I, cf. RZhKhim, 165318. [Abstracter's note: Complete translation.]

X

Card 2/2

18.1210

S/137/61/000/007/001/072
A060/A101

AUTHOR: Yudin, B. F.

TITLE: Thermodynamic properties of the components of cryolite-alumina smelt

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 7, 1961, 3, abstract 7A23
("Tr. Leningr. tekhnol. in-ta im. Lensoveta", 1960, no. 61, 9-20)

TEXT: The analysis of the known literature sources for the choice of initial data for calculating the thermodynamic functions of the components of cryolite-alumina smelt is carried out. A table of thermodynamic components of cryolite-alumina smelt from 298.15 to 1,400^oK is constructed. There are 56 references.

T. Kolesnikova

[Abstracter's note: Complete translation]

Card 1/1

YUDIN, B.F.

Thermodynamic properties of the components of cryolite-alumina
melts. Trudy LTI no.61:9-20 '60. (MIRA 15:5)
(Aluminum--Electrometallurgy) (Cryolite--Thermal properties)

GURVICH, Lev Veniaminovich, kand. khim. nauk; KHACHKURUZOV, Georgiy Akopovich, kand. khim. nauk; MEDVEDEV, Vadim Andreyevich, kand. khim. nauk; VEYTS, Inessa Veniaminovna, kand. khim. nauk; BERGMAN, Georgiy Andreyevich; YUNGAN, Vladimir Stepanovich; RTISHCHEVA, Nina Petrovna; KURATOVA, Lidiya Fedorovna; YURKOV, Georgiy Nikolayevich; KANE, Amaliya Abramovna; YUDIN, Boris Fedorovich; BROUNSHTEYN, Boris Isidorovich; BAYRAZ, Viktor Feodosyevich; KVLIVIDZE, Valeriy Aleksandrovich; PROZOROVSKIY, Yevgeniy Aleksandrovich; VOROB'YEV, Boris Aleksandrovich; GERASIMOV, Ya.I., retsenzeng; SKURATOV, S.M., prof., retsenzeng; GLUSHKO, V.P., akad., otv.red.; KHACHKURUZOV, G.A., red.; GUROV, K.P., red., izd.-va; LAUT, V.G., tekhn.red.

[Thermodynamic properties of individual substances; reference guide in two volumes] Termodinamicheskie svoystva individual'nykh veshchestv; spravochnik v dvukh tomakh. Izd.2., polnost'yu perer. i rasshirennoe. Pod red. V.P.Glushko (otv. red.) i dr. Moskva, Izd-vo Akad. nauk SSSR. Vol.1. (Calculation of thermodynamic properties) Vychislenie termodinamicheskikh svoystv. 1962. 1161 p. Vol.2. [Tables of thermodynamic properties] Tablitsy termodinamicheskikh svoystv. 1962. 916 p.

(MIRA 15:10)

(Continued on next card)

YUDIN, B.F.; MASHOVETS, V.P.

Thermodynamic properties of melts in the system $AlF_3 - NaF$.
Izv. vys. ucheb. zav.; tsvet. met. 5 no. 5: 54-61 '62. (MIRA 15:10)

1. Leningradskiy tekhnologicheskii institut, kafedra fizicheskoy
khimii.
(Cryolite—Thermal properties) (Aluminum—Electrometallurgy)

MASHOVETS, V.P.; YUDIN, B.F.

Thermodynamics of the interaction between AlF_3 , Na_3AlF_6 and NaAlF_4
with water vapor. Izv. vys. ucheb. zav.; tsvet. met. 5 no.4
95-105 '62. (MIRA 16:5)

1. Leningradskiy tekhnologicheskoy institut, kafedra fizicheskoy
khimii.

(Aluminum fluoride--Thermodynamic properties)
(Cryolite--Thermodynamic properties)
(Vapor pressure)

YUDIN, B.F.; MASHOVETS, V.P.

Molecular state of melts of the system $\text{AlF}_3 - \text{NaF} - \text{Al}_2\text{O}_3$. Zhur.-
prikl.khim. 36 no.6:1244-1250 Je '63. (MIRA 16:8)

1. Leningradskiy tekhnologicheskii institut imeni Lensovet.
(Cryolite—Thermodynamic properties) (Aluminum oxide)

YUDIN, B.F.

Effect of mechanical breaks of the pericarp on the germination
of triploid corn seeds. Dokl. AN SSSR 163 no.5:1253-1255 Ag '65.
(MIRA 18:8)

1. Submitted September 4, 1964.

L 06292-67 ENT(m)/ENP(e)/ENP(t)/ETI IJP(c) AT/WH/JD/WW/JW/JG/GD

ACC NR: AT6027147 (A) SOURCE CODE: UR/0000/65/000/000/0203/0208

AUTHOR: Voronin, N. I.; Makarova, N. L.; Yudin, B. F.

ORG: All-Union Institute of Refractories (Vsesoyuznyy institut ogneporov)

TITLE: Heat of formation of silicon carbide and products of its vaporization

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Issledovaniya v oblasti khimii silikatov i okislov (Studies in the field of chemistry of silicates and oxides). Moscow, Izd-vo Nauka, 1965, 203-208

TOPIC TAGS: heat of formation, silicon carbide

ABSTRACT: The study was undertaken in order to determine the heats of formation of SiC and products of its vaporization from vapor pressure data. Langmuir's method was used to determine the total vapor pressure over SiC and partial pressures of Si, Si₂C and SiC₂ at temperatures of 2113, 2193 and 2273°K. This method involves the use of the following formula for the equilibrium pressure of the substance during its vaporization from an open surface:

$$P = \frac{m}{St} \sqrt{\frac{2\pi RT}{M}}$$

The results of the calculations are shown in Table 1. The data are compared with those reported in the literature. Orig. art. has: 4 tables and 4 formulas

Card 1/2

L 06292-67

ACC NR: AT6027147

Table 1. Heats of Formation of Silicon Carbide and Products of Its Vaporization

Temperature of experiment (°K)	$\Delta H^\circ_{298.15} \text{ (kcal/mole)}$			
	$\text{SiC}_{\text{solid}}$	SiC_{gas}	SiC_{gas}	$\text{Si}_2\text{C}_{\text{gas}}$
2113	-23.75	—	143.76	118.90
2193	-26.98	—	149.14	122.02
2273	-28.22	—	151.90	123.17
Adopted value	-27.6	163.2	150.5	122.6

SUB CODE: 07/ SUBM DATE: 11Feb64/ ORIG REF: 001/ OTH REF: 007

Cord

2/2

YUDIN, B.F.; KHVATOVA, M.N.

Study of polyploidy series in corn. Izv. SO AN SSSR no.4 Ser.
biol.-med.nauk no.1:87-93 '65. (MIRA 18:8)

1. Biologicheskii institut Sibirskogo otdeleniya AN SSSR, Novosibirsk.

L 01224-57 EWP(e)/EWT(m)/EWP(t)/ETI IJP(c) JD/WW/JG/WH

ACC NR: AP6032944

SOURCE CODE: UR/0131/66/000/010/0050/0055

AUTHOR: Gropvancv, V. M.; Yudin, B. F.; Avgustinik, A. I. 76

ORG: All-Union Institute of Refractories (Vsesoyuznyy institut ogneporov) B

TITLE: High-temperature reactions in the TiC-ZrO₂ system 1.1

SOURCE: Ogneupory, no. 10, 1966, 50-55

TOPIC TAGS: refractory compound, titanium carbide, zirconia, high temperature research, solid state, reaction mechanism

ABSTRACT: Solid-state chemical reactions in the TiC-ZrO₂ system have been studied within the 1700--2400 K range in vacuum. Correlation of experimental data with thermodynamic analysis data indicated that only three reactions occur in the system within the temperature range studied. The direction of the chemical process and predominance of one or another of the three reactions depend on temperature, gaseous atmosphere composition, and the ratio of components in the starting mixture. Orig. art. has: 4 figures, 3 tables, and 13 equations. [JK]

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 001/ ATD PRESS: 5096

Card 1/1 *egk*

UDC: 666.76.001.5

L 24530-66 EMP(e)/EWT(m)/ETC(f)/ENG(m) JD/JW/JG/AT/WH
ACC NR: AP6011012

SOURCE CODE: UR/0080/66/039/003/0532/0544

AUTHOR: Yudin, B. F.; Karklit, A. K.

ORG: All-Union Institute of Refractories (Vsesoyuznyy)

TITLE: Thermodynamics of vaporization of refractories

SOURCE: Zhurnal prikladnoy khimii, v. 39, no. 3, 1966, 537-544

TOPIC TAGS: thermodynamic calculation, vaporization, heat of vaporization, aluminum oxide, zirconium compound, silicon dioxide, magnesium oxide, calcium oxide

ABSTRACT: The thermodynamics of vaporization of SiO_2 (quartz), ZrO_2 , MgO , CaO , and Al_2O_3 was studied. The heat of vaporization of SiO_2 at the boiling point, ΔH_{vap} , was calculated to be 167.1 kcal/mole SiO_2 . The approximation of partial pressures of the components of vaporization of ZrO_2 , MgO , CaO , and Al_2O_3 in mixtures of the type

$$\lg P_i = \frac{A_i}{T} + B_i$$

which gives the coefficient of the Van't Hoff equation, was shown to be sufficient.

Card 1/2

UDC: 541.18

L 24530-66

ACC NR: AP6011012

accurate. The heat of vaporization of Al_2O_3 at the boiling point was calculated to be ΔH_{vap} kcal/mole Al_2O_3 . The main vaporization products of Al_2O_3 are Al and O (pressure one order of magnitude greater than that of Al_2O_3 and Al_2O_3 as the temperature rises, the stability of aluminum suboxides increases appreciably, and at the boiling point the pressure of Al_2O_3 and Al varies).

SUB CODE: 11,07/ SUBM DATE: 06Dec63 ORIG FILE:

Card 2/2

YUDIN, B.F.

Rapid production of tetraploid corn hybrids. Izv. SO AN SSSR
no.8 Ser. biol. med. nauk no.2.15-18 '64 (MIRA 18:1)

1. Biologicheskii institut Sibirskogo otdeleniya AN SSSR,
Novosibirsk.

YUDIN, B. S., Cand Biol Sci (diss) -- "The ecology of Sorex of western Siberia and their practical significance". Tomsk, 1959. 17 pp (Tomsk State U im V. V. Krybyshev), 150 copies (KL, No 11, 1960, 131)

YUDIN, B.S.

Ecology of shrews (genus Sorex) in Western Siberia. Trudy Biol. inst.
Sib. otd. AN SSSR no.8:33-134 '62. (MIRA 15:12)
(Siberia, Western--Shrews)

YUDIN, B.S.; MARKINA, A.B.; TELEGIN, V.I.

New hosts of warble flies (Diptera, Hypodermatidae) among the rodents
of Georgia. Ent.oboz. 43 no.2:308 '64. (MIRA 17:9)

1. Biologicheskii institut Sibirskogo otdeleniya AN SSSR,

KRYLOV, G.V., doktor biol. nauk; GRADOBOYEV, N.D.; YUDIN, B.S.;
KABANOV, N.Ye.

Review and bibliography. Izv. SO AN SSSR no.8 Ser. biol.-med.
nauk no.2:150-154 '64 (MIRA 18:1)

VIL'PERT, K.I.; PEVZNER, Ya.M., doktor tekhn.nauk; TIKHONOV, A.A., kand.tekhn.
nauk; YUDIN, B.V.

Some problems in the statistical analysis of vibrations of a
motor vehicle. Avt.prom. 31 no.4:26-29 Ap '65.

(MIRA 18:5)

1. TSentral'nyy ordena Trudovogo Krasnogo Znameni nauchno-issledo-
vatel'skiy avtomobil'nyy i avtomotornyy institut.

SEDEROVICH, B., insh.; YUDIN, D., insh.; YATSYK, G., insh.

Industrial terms at the construction of the Kremenchug Hydro-
electric Power Station. Sots.trud. 4 no.9:114-116 8 '59.
(MIRA 13:1)

1. "Kremenchuggesstroy."
(Kremenchug Hydroelectric Power Station)

GULYAKIN, I.V., prof. doktor biolog. nauk; YUDIN, D.A., kand. sel'skokhoz. nauk; SHKEL', S.Ye., kand. sel'skokhoz. nauk; SIROTINA, I.A., mladshiy nauchnyy sotrudnik

Efficient use of fertilizers as a means for the intensification of agriculture; results of studies on the systems of the use of fertilizers in field crop rotation on the "Dubki" Experimental and Training Farm. Izv. TSKHA no.5:74-82 '64.

(MIRA 18:5)

1. Kafedra agrokhimii i biokhimii Moskovskoy ordena Lenina sel'skokhozyaystvennoy akademii imeni Timiryazeva.

YUDIN, D.B.

PHASE I BOOK EXPLOITATION

SOV/4276

Presnukhin, Leonid Nikolayevich, Doctor of Technical Sciences, Professor, Lev Aleksandrovich Serabrovskiy, and David Berkovich Yudin

Osnovy teorii i proyektirovaniya priborov upravleniya (Fundamentals of the Theory and Design of Control Devices) Moscow, Oborongiz, 1960. 263 p. Errata slip inserted. 10,000 copies printed.

Ed. (Title page): L.N. Presnukhin, Doctor of Technical Sciences, Professor;
Ed. (Inside book): S.O. Dobrogurskiy, Doctor of Technical Sciences, Professor;
Ed. of Publishing House: M.F. Bogomolova; Tech. Ed.: V.I. Oreshkina; Managing Ed.: S.D. Krasil'nikov, Engineer.

PURPOSE: This is a textbook for students of schools of higher technical education. It may also be useful to engineers and technicians working in industry and in scientific research institutes.

COVERAGE: The book discusses the theory and practice of designing the fundamental elements of artillery control devices, tracking systems for the continuous measurement of the moving coordinates of a target, differentiating-adjusting devices for the determination of the parameters of target motion, and the adjustment of errors obtained in the process of measuring the moving coordinates of the target. Impact solving methods which reduce to the combined solution

Card 1/6

Fundamentals of the Theory and Design of Control Devices

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963110002-8"

Ballistic functions and devices for their solution are given. Information on written on the initiative of P.P. Chechulin on the basis of material selected and systematized by the authors. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

Foreword

Ch. I. General Information	
1. Aim and tasks of the course	3
2. History of the development of [artillery] control devices	5
3. Terminology and symbols	5
4. Unit of measurement	6
5. Problems solvable by a system of artillery fire control	6
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Card 2/6

PHASE I BOOK EXPLOITATION

SOV/5699

Yudin, D. B., and Ye. G. Gol'shteyn

Zadachi i metody lineynogo programmirovaniya (Problems and Methods of Linear Programming) Moscow, Izd-vo "Sovetskoye radio," 1961. 490 p. Errata slip inserted. 10,000 copies printed.

Eds.: S. M. Movshovich and N. D. Ivanushko; Tech. Ed.: A. A. Sveshnikov.

PURPOSE: This book is intended for mathematicians, engineers, and economists with a background in higher mathematics.

COVERAGE: The book is said to be the first Soviet attempt to present systematically the theoretical basis, methods, and application of linear programming. Particular attention is given to the foundation and description of computational algorithms leading to calculation schemes which are illustrated by examples. Ch. 1 is concerned with the basic concepts and various interpretations of the problem of linear programming. The first four sections of this chapter are of a rather elementary illustrative character; the following are more rigorous. Ch. 2 deals with various practical questions involving general and particular problems of linear programming. Its purpose is to illustrate methods of formulating economic,

Card 1/5

Problems and Methods of Linear Programming

SOV/5699

engineering, military, and other problems in terms of linear programming. Chs. 3 and 4 discuss general methods, their foundation, and corresponding algorithms. The method for the iterative improvement of a plan is described in great detail; duality methods are described concisely. Ch. 5 contains a detailed study of one of the important particular problems of linear programming, the transportation problem. Proofs for some of the statements of Ch. 5 may be found in section 7 of Ch. 6. In Sec. 1.1 of 6 the basic concepts of multidimensional space as used in the book are established and explained. The rest of this chapter deals with the mathematical basis of the theory of linear programming. Special problems of linear programming not discussed elsewhere in the book are outlined briefly in the Conclusion. The Bibliography lists only the sources actually used in the text. The authors thank Professor A. A. Lyapunov, I. A. Poletayev, L. S. Gurin, S. M. Mayshovich, and V. V. Bokova. There are 69 references: 19 Soviet, 48 English, 1 French, and 1 Finnish.

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S/194/61/000/012/031/097
D201/D303

AUTHORS: Gol'shteyn, Ye. G. and Yudin, D. B.

TITLE: A class of problems in planning national economy

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika,
no. 12, 1961, 47, abstract 12B301 (V sb. Probl. ki-
bernetiki, no. 5, M., Fizmatgiz, 1961, 165-182) .

TEXT: Even the best of current computers cannot cope with the vo-
lume of computations required for planning of the national eco-
nomy which requires linear programming. It would, therefore, be ex-
pedient to develop special methods for particular problems of li-
near programming. The consideration of peculiar conditions of a
problem can make it possible to reduce substantially the computer
work in many cases. Several problems in national economy planning
are considered which may be reduced to a single formal analogue.
A special method is developed for the purpose of analysis. The
suggested method of numerical analysis permits a substantial re-
duction in the number of variables and in problem limitations of

Card 1/2

A class of problems ...

S/194/61/000/012/031/697
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linear programming, together with a reduction in the number of operations required for determining an optimum plan. A special feature of the method being considered is introduction of straight-line approximated transport charges. It is shown that the number of operations required for setting up the algorithm for realizing the method exceeds only slightly the number of operations required to solve the transport problem in the same number of variables. The material is presented in the following form: A classical transport problem is set up, together with the modification, taking into account the limitations due to the limited carrying capacity of the transport networks. Two models of production and of one kind of commodity transportation are analyzed. These problems are then made more complex and the problem of planning formulated. General considerations as to the method of solving the problem are given. The algorithm of the problem solution is described. It is shown in conclusion how the problem may be made a more general one, applying to more complicated models and in particular to the model of production and different goods transportation. 3 references. / Abstractor's note: Complete translation. /

Card 2/2

AM4033658

BOOK EXPLOITATION

S/

Yudin, David Borisovich; Gol'shteyn, YEvgeniy Grigor'yevich

Linear programming; theory and terminal methods (Lineynoye programmirovaniye; teoriya i konechnyye metody*). Moscow, Fizmatgiz, 63, 0775 p. illus., biblio., index. 26,000 copies printed.

Series note: Fiziko-matematicheskaya biblioteka

TOPIC TAGS: linear programming, convex polyhedral set, duality theory, successive approximation, operations research, finite set

PURPOSE AND COVERAGE: The book contains a detailed exposition of the mathematical theory of linear programming and computational methods which make it possible to find an exact solution of the problem within a finite number of steps. The book is intended for engineers, economists, and mathematicians engaged in applied mathematics. It can also be used by students in mathematics, economics, and engineering-economics departments of higher educational institutions.

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AFFTC/ASD/APGC/IJP(C)

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Pg-4 BC

ACCESSION NR: AP3003739

S/0103/63/024/007/0921/0928

76

AUTHOR: Gol'shteyn, Ye. G. (Moscow); Yudin, D. B. (Moscow)

TITLE: Methods for calculating and synthesizing sampld data automatic systems. 1

SOURCE: Avtomatika i telemekhanika, v. 24, no. 7, 1963, 921-928

TOPIC TAGS: automatic system, sampled data

ABSTRACT: The present first part of the article develops the problem formulated by Ya. Z. Tsy*pkin (Izv. AN SSSR, Otd. tekhn. n., Energetika i avtomatika, no. 4, 1960). Calculating and synthesizing sampled-data automatic systems can be reduced to consecutive solution of mathematical-programing problems on a digital computer included in the automatic system. In the authors' terminology, the calculation of an optimum system is a sequence of computing operations used for determining the optimum controlling actions within specified constraints; the

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ACCESSION NR: AP3003739

synthesizing is a determining of the system structure or the computer program that ensures the system control in accordance with the optimum action. An example of an automatic system with pulse-amplitude modulation is considered in several versions. It is noted that the constraints imposed on the system can be expressed as linear and quadratic equalities or inequalities. Orig. art. has: 1 figure and 26 formulas.

ASSOCIATION: none

SUBMITTED: 18Aug62

DATE ACQ: 02Aug63

ENCL: 00

SUB CODE: IE

NO REF SOV: 006

OTHER: 001

Card 2/2

YUDIN, D.B. (Moskva)

Methods for quantitative analysis of complex systems. Part 1.
Izv. AN SSSR. Tekh. kib. no.1:3-13 Ja-F '65.

(MIRA 18:4)

L 38199-66 EWT(d)/T/EWP(i) IJP(c)

ACC NR: AP6008514

SOURCE CODE: UR/0280/66/000/001/0003/0016

AUTHOR: Yudin, D. B. (Doctor of Technical Sciences, Professor; Moscow)

ORG: none

TITLE: Methods for the quantitative analysis of complex systems. Part II

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 1, 1966, 3-16

TOPIC TAGS: mathematic method, random process, quantitative analysis, ~~system~~ reliability, automatic machine

ABSTRACT: This is a continuation of a discussion of mathematical programming methods, a method for the investigation and the synthesis of complex systems (Metody kolichestvennogo analiza slozhnykh sistem, I. Izv. AN SSSR, Tekhnicheskaya kibernetika, 1965, No. 1). Specifically considered in this article are different varieties of random search. Ways are studied for the rational organization of the process of seeking a global extremum in multi-extremum problems. The general concept of random search methodology is explained and various forms of discrete stepwise and continuous random search techniques are considered, with particular attention to the elements of teaching and adaptation they contain. It is shown that many of the random search methods that have been described in the literature are essentially engineering methods. Other nontrivial mathematical methods of random search are

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L 38190-66

ACC NO: AP6008514

analyzed and cases are considered in which the global minimum is significantly "deeper" than the local minima and in which more effective techniques for shortening the mean search time for the global extremum are employed. The author wishes to thank R. Z. Khas'minskiy, E. M. Vaysbor, and L. Kh. Sokolovskiy for their helpful remarks and comments on the material in this paper. Orig. art. has: 39 formulas.

SUB CODE: 12,14/ SUBM DATE: 11Nov65/ ORIG REF: 018/ OTH REF: 005

Cord 2/2MLP

ACC NR: AM6029189

Monograph

UR/

Gol'shteyn, Yevgeniy Grigor'yevich; Yudin, David Borisovich

New trends in linear programming (Novyye napravleniya v lineynom programmirovani) Moscow, Izd-vo "Sovetskoye radio", 1966. 524 p. illus., biblio., index. Errata slip inserted. 9,400 copies printed.

TOPIC TAGS: linear programming, transport theory, parametric programming, block programming, integer programming, stochastic programming,

PURPOSE AND COVERAGE: This book systematically sets forth promising and practically important trends in linear programming developed in recent years. It should be regarded as a continuation of a previous book by the same authors /Zadachi i metody lineynogo programmirovaniya (Problems and methods of linear programming). Second edition, revised and supplemented. Izd-vo "Sovetskoye radio," 1964/. The material includes new approaches and methods, also some important problems that usually receive insufficient attention in linear programming courses. New results presented here include methods for solving some pert system problems; a scheme for analyzing the general single-parameter problem of linear programming and some applications of parametric programming; new and quite general approaches to analysis of the problem of block programming; theory, methods, and

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UDC: 519.82

ACC NR: AM6029189

algorithms for solving various classes of piecewise linear problems, et cetera. The book is intended for a wide circle of mathematicians, engineers, and economists working in the field of mathematical economics, automatic control, studies of military operations, and systems engineering. It is assumed that the readers are familiar with the basic concepts, qualitative results, and computational algorithms presented in the previous book. The book may also be used by graduate students and other students specializing in computational mathematics, mathematical economics, automatic control, operations research, and the planning of large complexes and systems for modern technology.

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ACC NR: AM6029189

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SUB CODE: 12/

SUBM DATE: 23Feb66/

ORIG REF: 030/ OTH REF: 065/

Cord 3/3

YUDIN, David Borisovich; GOL'SHTEYN, Yevgeniy Grigor'yevich;
IVANUSHKO, N.D., red.

[Problems and methods for linear programming] Zadachi i
metody lineinogo programmirovaniia. Izd.2., perer. i
dop. Moskva, Sovetskoe radio, 1964. 735 p.
(MIRA 18:1)

SENDEROVICH, B.I., inzh.; YUDIN, D.G., inzh.; YATSYK, G.Ye., inzh.

Construction of concrete slope lining of earth structures using
bulldozers. Energ. stroi. no.20:79-81 '61. (MIRA 15:1)

1. Normativno-issledovatel'skaya stantsiya No.18 na stroitel'stve
Kremenchugskoy gidroelektrostantsii.
(Khrmenchug Hydroelectric Power Station--Concrete construction)
(Bulldozers)

YUDIN, D. L.

"Effect of the Preliminary Strengthening of Material on the Microgeometry of Turned Surfaces." Sub 19 Jun 47, Moscow Order of the Labor Red Banner Higher Technical School imeni N.E. Bauman

Dissertations presented for degrees in science and engineering in Moscow in 1947.

SO: Sum.No. 457, 18 Apr 55

YUDIE, D.L., kand, tekhn, nauk, dots.

Increasing labor productivity in high-speed machining of wheel
pairs using metal-cutting tools with chipbreakers. Trudy NIIT no.93:
94-124 '57.

(Car wheels) (Metal-cutting)

(MIRA 11:4)

YUDIN, DANIIL, L'VOVICH

25(7)

PHASE I BOOK EXPLOITATION

SOV/1215

Zobnin, Nikolay Pavlovich; Shishkin, Aleksey Alekseyevich; and Yudin, Daniil L'vovich

Oborabotka metallov rezaniyem (Metal Cutting) Moscow, Transzheldorizdat, 1958. 256 p. 6,000 copies printed.

Ed. (Title page): Zobnin, N.P., Doctor of Technical Sciences, Professor; Eds. (Inside book): Danilevskiy, V.V., Candidate of Technical Sciences, Docent, and Braylovskiy, N.G., Engineer; Tech. Ed.: Bobrova, Ye. N.

PURPOSE: This book is approved by the Ministry of Higher Education, USSR, as a handbook for railroad transport vuzes. It may also be useful to engineers and technicians in plants and in railroad repair shops for rolling stock, wheels and track.

COVERAGE: The book presents the theoretical fundamentals of metal cutting. The construction and operation of metal-cutting machinery

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Metal Cutting

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and instruments are described. The fundamentals of methods used in development of techniques of mechanical metal processing are discussed. The name of A.V. Gadolin is mentioned as having contributed to this field. There are 80 references, of which 74 are Soviet, 5 English and 1 German.

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AVAILABLE: Library of Congress

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GO/ksv
2-26-59

YUDIN, D.L., dots., kand.tekhn.nauk; REZNIKOVA, N.P., kand.tekhn.nauk.
PORKACHEV, M.A., inzh.

Mechanical reinforcing of gear teeth along the whole profile.
Elek.1 tepl.tiaga 14 no.3:25-26 Mr '60. (MIRA 13:7)

1. Moskovskiy institut inzhenerov zheleznodorozhnogo transporta.
(Gearing, Spur)

YUDIN, D.I.

Strengthening tooth surfaces of the traction transmission of
diesel locomotives by cold hardening along the profile. Trudy
Sem.p0 kach.poverkh. no.5:94-101 '61. (MIRA 15:10)
(Surface hardening)

ZABLONSKIY, K.I., prof.; ZOBNIY, N.P., doktor tekhn. nauk, prof.;
YUDIN, D.I., kand. tekhn. nauk, dotsent; FILIPOVICH, S.I.,
inzh.; FORKHACHEV, M.A., inzh.

Stands for hardening treatment and strength testing of the
traction transmission gearing of locomotives. Trudy MIIT
no.159:75-88 '62. (MIRA 16:6)

(Locomotives—Transmission devices)

ZOBININ, N.P., doktor tekhn. nauk, prof.; ROGOV, A.Ya., kand. tekhn.
nauk, dotsent; KHAPKO, V.U., kand. tekhn. nauk, dotsent;
YUDIN, D.I., kand. tekhn. nauk, dotsent

Effect of the cold working depth on the service life of axle
press joints. Trudy MIIT no.159:89-98 '62. (MIRA 16:6)

(Car axles)

(Metals—Cold working)

ZOBNIN, Nikolay Pavlovich, prof., doktor tekhn.nauk; YUDIN, Daniil
L'vovich, dots., kand.tekhn.nauk; SHISHKIN, Aleksey Alekseyevich,
dots.,kand.tekhn.nauk; ROGOV, Aleksandr Yakovlevich, dots., kand.tekhn.
nauk; REKUDANOV, P.N., kand.tekhn.nauk, retsenzent; SARANTSEV, Yu.S., ind.,
red.; BOBROVA, Ye.N., tekhn. red.

[Metal cutting] Obrabotka metallov rezaniem. Izd.2. Moskva, Trans-
zheldorizdat, 1962. 299 p. (MIRA 15:6)

1. Moskovskiy institut inzhenerov zheleznodorozhnogo transporta (for
Zobnin, Yudin, Rogov). 2. Rostovskiy institut inzhenerov zhelezn-
dorozhnogo transporta (for Shishkin).
(Metal cutting)

ZABLONSKIY, K.I., prof.; YUDIN, D.L., kand.tekhn.nauk, dotsent; FILIPOVICH, S.I.,
inzh.

Methodology for the fatigue strength testing of the teeth of
diesel locomotive gear wheels on a special stand. Trudy MIIT
no.200:54-65 '64.

(MIRA 18:8)

YUDIN, D.L., kand.tekhn.nauk, dotsent; PORKHACHEV, M.A., inzh.; STATNIKOV, R.B.,
inzh.; YUDIN, V.A., inzh.

Methodology for the testing of locomotive gear transmissions on a
special stand. Trudy MIIT no.200/105-115 '64.

(MIRA-18:8)

YUDIN, D.I., kand.tekhn.nauk, dotsent; ROGOV, A.Ya., kand.tekhn.nauk, dotsent;
POKHACHEV, M.I., inzh.; RUD', A.N., inzh.

Hardening of traction gears for diesel locomotives by means of the
plastic deformation of the surface tooth layer on a special stand.
Trudy NIIT no.200:21-46 '64. (MIRA 18:8)

KARAPETYAN, G.O.; YUDIN, D.M.

Using the electron paramagnetic resonance method for studying
the effect of gamma-radiation on phosphate glass. Fiz. tver.
tela 3 no.9:2827-2834 S '61. (MIRA 14:9)

1. Gosudarstvennyy opticheskiy institut imeni S.I. Vavilova,
Leningrad.

(Paramagnetic resonance and relaxation)
(Gamma rays) (Glass)

8/181/62/004/010/002/063
B108/B186

AUTHORS: Karapetyan, G. O., and Yudin, D. M.

TITLE: e. p. r.-investigation of the action of ionizing radiation on glasses of the system $\text{Na}_2\text{O} \cdot \text{B}_2\text{O}_3 \cdot \text{SiO}_2$

PERIODICAL: Fizika tverdogo tela, v. 4, no. 10, 1962, 2647-2655

TEXT: Glasses exposed to Co^{60} gamma radiation were investigated with the e. p. r. method. The irradiation gave rise to a coloration of the glasses, intensity and hue being dependent on the composition of the glass. The F centers arising in the glasses under consideration are due to four different structural lattices: SiO_2 , $\text{SiO}_2 \cdot 2\text{Na}_2\text{O}$, BO_3 , BO_4 . The optical spectra of additional absorption of the glasses had three bands with their peaks at 310, 440, and 620 mμ. Gamma radiation breaks covalent bonds in the glasses thus producing free electrons, and holes localized at the oxygen. The position of the electron trapping centers is known to be localized at the boron since hyperfine structure lines were observed associated with the interaction of an electron with

Card 1/2

e. p. r.-investigation of the action ... S/181/62/004/010/002/063
B¹⁰ and B¹¹ nuclei. It is concluded that the electrons are localized
also at the silicon or at the lattice-forming atoms. There are 5
figures. B108/B186

ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S. I.
Vavilova, Leningrad (State Optics Institute imeni
S. I. Vavilov, Leningrad)

SUBMITTED: April 6, 1962

Card 2/2

YUDIN, D. M.

Investigation of the electrical conductivity of vitreous semiconductors of the type As_2Te_3 . A. I. Gubanov, T. F. Mazets (10 minutes).

Study of semiconducting glasses by the electron paramagnetic resonance method. G. A. Karapetyan, V. A. Tsekhomskiy, D. M. Yudin.

Semiconducting silicate glasses based on titanium oxide. Ya. A. Kraznetsov, V. A. Tsekhomskiy. (Presented by V. A. Tsekhomskiy--15 minutes).

Report presented at the 3rd National Conference on Semiconductor Compounds, Kishinev, 16-21 Sept 1963

247000

AUTHORS:

TITLE:

Karapetyan, G. O., Tsekhomskiy, V. A., and Yudin, D. M.
Investigation of the structure of semiconductor glasses based
on iron oxides

PERIODICAL: Fizika tverdogo tela, v. 5, no. 2, 1963, 627 - 633
TEXT: The electrical, optical and paramagnetic properties of Fe_2O_3 containing glasses were studied in dependence on the composition and on the redox conditions of melting. A total of 15 different compositions were investigated, most of them contained SiO_2 and BaO or PbO . Electrical conductivity, the e.p.r. spectra and the spectra of optical absorption were measured. $\log \rho = f(1/T)$ were straight lines, almost equally ascending for all glasses; $\log \rho$ decreases with increasing Fe_2O_3 percentage. The increase in conductivity is accompanied by a slight reduction of activation energy. A comparison of glasses melted under different redox condition shows that increased reduction (increased content of carbon in the mass) raises the resistivity irrespective of raised Fe II content. The e.p.r. Card 1/2

APPROVED FOR RELEASE

Investigation of the ...

S/181/63/005/002/039/051
B102/B186

spectra were measured in fields of up to 6 koe. Resonance lines were observed at g-factors of 4.3 and 2.0; their intensity depended on the composition. If the carbon content is increased the e.p.r. lines fade out due to $Fe^{3+} \rightarrow Fe^{2+}$ transition; the Fe^{2+} e.p.r. spectrum can be observed only at helium temperatures. The line with $g = 2.0$ vanishes first. On investigating the optical absorption it was found that both in the case of BaO and PbO content the blue transmissivity depends on the iron concentration. Conclusions: The high conductivity of the glasses investigated is due to the presence of Fe^{3+} ions ($3d^5$) in octahedral configuration (coordination 6). Introduction of Al into the mass or substitution of SiO_2 by B_2O_3 in BaO glass increases absorption and reduces conductivity. There are 5 figures and 1 table.

ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S. I. Vavilova,
Leningrad (State Optical Institute imeni S. I. Vavilov, Leningrad)

SUBMITTED:
Card 2/2

September 26, 1962

L 10179-63

APFTC/ASD/SSD

ACCESSION NR: APJ000539

AUTHOR: Karapetov

ENT(1)/ENP(q)/ENT(m)/RDS/REC(b)-2

8/0051/63/014/005/000

US AT the XI Soveshchaniya po Luminestentsii (Report presented
Luminescence) in Minsk

SOURCE: Optika

Card 1/3

L 10179-63

ACCESSION NR: AP3006588

Intensity of the narrow band dropped and finally vanished when silicon oxide content was increased, but increased with an increase in the alkali oxide and boron anhydride content. In experiments with potassium barium borate and sodium barium borate glasses prepared under reducing conditions, variations in Cr concentration of 0.05 to 1.5% caused peak-intensity changes. The intensity of the narrow band decreased with an increase in Cr content decreased to 0.05%.

Preparation of the glass with 0.05% Cr content decreased to 0.05%.

Preparation of the glass with 0.05% Cr content decreased to 0.05% at various temperatures (1500°C) showed that a temperature increase led to a decrease in the intensity of the narrow band. The EPR spectra of sodium borosilicate glasses with varying Cr concentration had a characteristic asymmetric line with $g = 1.97$ and two side bands. The spectra of the glasses with 0.05% Cr content showed a decrease in the intensity of the narrow band.

KARAPETYAN, G. O.; REYSHAKHIT, A. L.; YUDIN, D. M.

2

"Photoconductance as a method of studying selenium - cadmium glasses."

report submitted for 4th All-Union Conf on Structure of Glass, Leningrad,
16-21 Mar 64.

KARAPETYAN, G. O.; YUDIN, D. M.

"Studying glass structure by the method of electron paramagnetic resonance."

report submitted for 4th All-Union Conf on Structure of Glass, Leningrad,
16-21 Mar 64.

ACCESSION NR: AP4034940

S/0181/64/026/005/1531/1539

AUTHOR: Karapetyan, G. O.; Stepanov, S. A.; Yudin, D. M.

TITLE: Color centers in sodium aluminosilicate glasses

SOURCE: Fizika tverdogo tela, v. 6, no. 5, 1964, 1531-1539

TOPIC TAGS: glass, sodium aluminosilicate glass, color center, F center, radiation effect, radiation damage

ABSTRACT: The EPR and optical absorption spectrum of $\text{Na}_2\text{O}-\text{Al}_2\text{O}_3-\text{SiO}_2$ glasses irradiated with gamma rays from a Co^{60} source with a dose rate of 10^{-4} r/hr was investigated. The experimental data obtained are analyzed in terms of models for the production of the traps found in the literature or proposed by the authors. The interpretation of the models is expected to be helpful in making detailed calculations based on the theory of molecular orbitals. Orig. art. has: 4 figures and 1 table.

Card 1/2

ACCESSION NR: AP4034940

ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S. I.
Vavilova, Leningrad (State Institute of Optics)

SUBMITTED: 31May63

SUB CODE: OP

DATE ACQ: 20May64

NO REF SOV: 005

ENCL: 00

OTHER: 011

Card 2/2

KARAPET'YAN, G.G.; KONDRAT'YEV, Yu.N.; YUDIN, D.M.

Use of the paramagnetic resonance method in studying the
crystallization of glasses. Fiz. tver. tela 6 no.5:2554-1557
My '64. (MIRA 17:9)

1. Gosudarstvennyy opticheskiy institut imeni Vavilova, Leningrad.

ACCESSION NR: AP4037231

8/0153/64/007/001/0101/0105

AUTHOR: Avgustinik, A. I.; Sintsova, I. T.; Yudin, D. M.

TITLE: The precrystallization period in glasses of the K sub 2 O SiO sub 2 system

SOURCE: Izvuz. Khimiya i khimicheskaya tekhnologiya, v. 7, no. 1, 1964, 101-105

TOPIC TAGS: glass, crystallization, precrystallization, K sub 2 O SiO sub 2 system, prenucleation group, rate, formation, K sub 2 O.2SiO sub 2, IR analysis, EPR analysis, quartz bond rupture, disilicate bond formation, microhardness, modulus, shear, sonic rate, glass strength, amorphous glass, crystalline glass, internal thermal stress

ABSTRACT: This study was conducted to explain the effect of the crystallizability of a glass on the rate and degree of prenucleation group (p-group) formation. Two glasses of the K_2O-SiO_2 system were examined: A, containing 33.4 mol% K_2O , 66.6 SiO_2 , readily crystallizing as $K_2O.2SiO_2$, and B, containing 19 K_2O and 81.0 SiO_2 , having the least tendency to crystallize and approximating the eutectic between $K_2O.4SiO_2$ and SiO_2 . In the binary glass $K_2O.SiO_2$ changing the cooling causes a change in the fine structure as evidenced by IR absorption and electron paramagnetic resonance

Card

1/3

ACCESSION NR: AP4037231

spectra: the increase in intensity at 980 cm^{-1} and shift toward the shorter wave length indicates molecular vibrations in the formed groups; the resonance lines indicate rupture of quartz bonds and disappearance of high silica content with simultaneous increase in the number and strength of the disilicate bond. As the holding temperature is reduced and as holding time is increased, the microhardness, modulus of shear, and sonic rate are increased in glass A. This increased strength results from a gradual transition from the amorphous to the more regular and oriented structure. The composition and structure of the p-groups formed approximate those of the crystalline phase formed by homogeneous crystallization. In the non-crystalline glass B no change was noticed in the IR spectra even after holding at 1100°C for 26 hours. This further confirms that the rate of the p-groups formation determines the ability of a glass to crystallize. The decrease in microhardness upon prolonged annealing in this glass B is attributed to relieving the internal thermal stresses. "Graduate L. G. Lazarevich participated in the work." Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Leningradskiy tekhnologicheskii institut im. Lensovyeta Kafedra tekhnologii keramicheskikh proizvodstv (Leningrad Technological Institute, Branch of Ceramic Industries)

Cord 2/3

ACCESSION NR: AP4037231

SUBMITTED: 24Sep63

ENCL: 00

SUB CODE: MT

NO REF SOV: 008

OTHER: 001

Card

3/3

ACCESSION NR: AP4011485

S/0051/64/016/001/0063/0068

AUTHOR: Karapetyan, G.O.; Ksendzatskaya, Yu.N.; Yudin, D.M.

TITLE: Investigation of the kinetics of formation of ZnS:Mn phosphor by the method of electron paramagnetic resonance

SOURCE: Optika i spektroskopiya, v.16, no.1, 1984, 53-68

TOPIC TAGS: phosphor synthesis, manganese activated zinc sulfide, ZnS:Mn phosphor, photoluminescence, cathodoluminescence, manganese 2+, EPR, sphalerite, wurtzite

ABSTRACT: Despite the fact that there have been numerous investigations of ZnS-Mn phosphors, adequate data are still lacking on the kinetics of the synthesis process and on the formation of luminescence centers in phosphors of this type. The present work was devoted to investigation of the kinetics of formation of Mn activated zinc sulfide luminophors. There were studied the electron paramagnetic resonance spectra, the luminescence spectra and the intensity of luminescence under cathodic and ultra-violet stimulation as a function of the activator concentration, the synthesis temperature and the action of ionizing radiation. Mn activated ZnS phosphor is particularly suitable for investigation by the method of electron paramagnetic resonance

Card 1/2

ACC.NR: AP4011485

in view of the fact that the EPR spectrum of the Mn ion varies greatly with changes in lattice structure. The specimens were prepared in the form of powder in sealed quartz tubes 3 mm in diameter. the Mn^{2+} concentration was varied in the range from 10^{-5} to 8×10^{-4} g/g; the heating temperature was varied in the range from 780 to 1200°C; the heating time in the range from 5 to 30 min. The EPR and luminescence spectra are reproduced in figures. In the range of low (10^{-5} g/g) Mn concentrations the manganese luminescence spectrum does not undergo significant changes with variation in heating conditions, but at higher Mn concentrations significant alterations are observed. These changes are attributed, on the basis of the experimental data, to change from the sphalerite to the wurtzite structure with increase of the heating temperature. The experimental results indicate moreover, that the EPR method can be used for investigating the rate of formation of crystals, the character of the crystals and the conditions of penetration of the activator into the crystal phosphor. Orig.art.has: 5 figures and 1 table

ASSOCIATION: none

SUBMITTED: 09Apr63

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: FM

MR REF SOV: 003

OTHER: 005

Card 2/2

1 12885-66 EWT(1)/EWP(6)/EWT(m)/EWP(b) 1JP(c) WY/GG/WH

ACC NR: AT6000495

SOURCE CODE: UR/0000/65/000/000/005

AUTHOR: Karapetyan, G. O.; Yudin, D. M.

ORG: none

TITLE: Investigation of the structure of glass by the electron paramagnetic resonance method

SOURCE: Vsesoyuznoye soveshchaniye po stekloobraznomu sostoyaniyu. 4th, Leningrad, 1962. Stekloobraznoye sostoyaniye (Vitreous state); trudy soveshchaniya. Leningrad, Izdat. Khim. 1965, 254-257

TOPIC TAGS: EPR spectrum, EPR spectrometry, phosphate glass, structure, property

ABSTRACT: This article examines the electron paramagnetic resonance centers associated with boron in phosphate glasses.

in order to determine the asymmetry of the coordination spheres and the role of oxidation-reduction conditions in the making of phosphate glass. The paramagnetic centers in the investigated glasses appeared after their irradiation with ionizing radiation. The hyperfine structure are resolved in the EPR spectra of borate glasses. The replacement

^{11}B ($I = 3/2$) by ^{10}B ($I = 3$) leads to a change of the number of paramagnetic centers.

Card 1/2

L 12885-56

ACC NR:

AT6000495

owing to different nuclear spins in the boron isotopes and the difference between the lines as a result of a difference in the appearance of numerous lines. The appearance of numerous lines is explained by the presence of two different trapping centers in the structure of zinc-phosphate glass. The oxidation state of the one starting center BO_3 . The oxidation state of the other conditions is similar to that for alkali-phosphate glass. However, under reductive conditions the usual hyperfine structure characteristic for trapping centers near phosphorus is absent and an unresolved resonance line is observed in its place. Orig. art. has: 2 figures

SUB CODE: 11, 18 / SUBM DATE: 22May65 / ORIG REF: 006 / OTI REF: 003

Card 2/2

HW

L 13558-66 EWT(1)/EWP(e)/EWT(m)/EWP(b)/EWA(h)/EWA(i)
ACC NR: AT6000699

SOURCE: E:

TITLE: Photoconductivity as a method for the study of selenocadmium glass

TOPIC TAGS: photoconductivity, electron paramagnetic resonance

SUB CODE: 11, 20 / SUBM DATE: 22May65 / ORIG REF: 005 / OTH REF: 005
Cord 1/1 HU

OSHEN, A.O.; KARATEYAN, S.O.; YUDIN, P.N.

Study of diamonds using the method of electron paramagnetic resonance (EPR). Geol. i geofiz. no.5:127-131 '68.

(MIRA 28:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologichesk'y institut, Leningrad.

100481-22
ACCESSION NO. APS-12-104

AUTHOR: Larkharov, V. K.; Yudin, D. M.

TITLE: Investigation of glasses with chromium

SOURCE: Fizika tverdogo tela, v. 7, no. 5, 1965, pp. 1048-1052

TOPIC TAGS: EPR spectrum, glass property, spin system, wave function

ABSTRACT: This is a continuation of earlier EPR studies of glasses with trivalent chromium (Opt. i spektr. v. 15, 700, 1963). The present investigation had for its purpose to check on the values of the g -factors, which in some cases were found to be different from those calculated in the earlier paper. Measurement of a glass with composition (all molar percent) 50% P_2O_5 , 34% Al_2O_3 , 13% K_2O containing 0.24 and 0.77% Cr^{3+} was made. The g -factors were found to be 1.98 and 1.99. The measurements were made with RE1301 apparatus at an operating frequency ~ 9300 Mcs. A spin Hamiltonian, wave functions, and a scheme for the spin sublevels of the Cr^{3+} ion are proposed to reconcile these values of the g -factors. G. O. Karapetov for the English text.

L 00481-66

ACCESSION NR: AP5012584

ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S. I. Vavilova
(State Optical Institute)

SUBMITTED: 22 Dec 64

NR REF DIV: 002

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